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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/587,116	07/24/2006	Masatoshi Nakanishi	10921.420USWO	9517		
52835	7590	09/17/2008	EXAMINER			
HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902			FEGGINS, KRISTAL J			
ART UNIT		PAPER NUMBER				
2861						
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/587,116	NAKANISHI, MASATOSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	K. Feggins	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) \_\_\_\_ is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1, 3/1, 4 & 5 is/are rejected.  
 7) Claim(s) 2 & 3/2 is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 7/24/2006.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 4 & 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirakawa et al. (JP 10-100460 A).

#### **Shirakawa et al. disclose the following:**

\* Re clm 4, a thermal printhead; a substrate, a glaze layer provided on the substrate, a plurality of heat-producing resistance sections provided on the glaze layer, an electrode layer connected to the heat-producing resistance sections, and a protective layer covering the heat-producing resistance sections and the electrode layer, the heat-producing resistance sections melting ink of an ink ribbon, which is transferred together with a recording sheet, to transfer the ink onto the recording sheet; wherein the electrode layer includes an electrode portion located downstream from the heat-producing resistance sections in a secondary scanning direction which is a transfer direction of the ink ribbon; and wherein, of an obverse surface of the protective layer, a region which is located downstream from the electrode portion in the secondary scanning direction is lower, in height on an obverse surface of the glaze layer, than a region covering the electrode portion and comprises a smooth surface without recesses or projections (Abst., para 002-006, fig 9).

\* Re clm 5, wherein, of the obverse surface of the protective layer, the region which is located downstream from the electrode portion in the secondary scanning direction is inclined to reduce height from the substrate as the region extends downstream in the secondary scanning direction (Abst., para 002-006, fig 9).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 & 3/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (JP 7-132630) in view of Watanabe (JP 11-157111).

***Yoshida discloses the following:***

\* Re clm 1, a thermal printhead (para 0010-0012, figs 1 & 3);

\* a substrate and a plurality of heat-producing resistance sections provided on the substrate, the heat-producing resistance sections melting ink of an ink ribbon, which is transferred together with a recording sheet, to transfer the ink onto the recording sheet (para 0010-0012, figs 1 & 3);

\* wherein the thermal printhead further comprises an inequality surface region provided downstream from the heat-producing resistance sections in a secondary scanning direction which is a transfer direction of the ink ribbon (para 0010-0012, figs 1 & 3);

**Yoshida does not discloses the following:**

\* Re clm 1, the inequality surface region including a plurality of projections each of which extends in the secondary scanning direction and which are aligned at predetermined intervals in a primary scanning direction which is perpendicular to the secondary scanning direction.

\* Re clm 3/1, further comprising a glaze layer formed on the substrate;

\* an edge pattern which is formed adjacent to a downstream edge of the glaze layer in the secondary scanning direction and is in a form of a rib extending in the primary scanning direction, wherein the inequality surface region is provided by forming inequalities at an upper portion of the edge pattern.

**Watanabe et al. disclose the following:**

\*Re clm 1, the inequality surface region including a plurality of projections each of which extends in the secondary scanning direction and which are aligned at predetermined intervals in a primary scanning direction which is perpendicular to the secondary scanning direction (Abst., para 0017-0020, fig 5) for the purpose of preventing peeling of the protective layer.

\* Re clm 3/1, further comprising a glaze layer formed on the substrate (Abst., para 0017-0020, fig 5) for the purpose of enhancing abrasion resistance thereby preventing peeling of the protective layer.

\* an edge pattern which is formed adjacent to a downstream edge of the glaze layer in the secondary scanning direction and is in a form of a rib extending in the primary scanning direction (Abst., para 0017-0020, fig 5), wherein the inequality surface region is provided by forming inequalities at an upper portion of the edge pattern (Abst., para 0017-0020, fig 5) for the purpose of enhancing humidity resistance thereby preventing peeling of the protective layer.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize the inequality surface region including a plurality of projections each of which extends in the secondary scanning direction and which are aligned at predetermined intervals in a primary scanning direction which is perpendicular to the secondary scanning direction; a glaze layer formed on the substrate; and an edge pattern which is formed adjacent to a downstream edge of the glaze layer in the secondary scanning direction and is in a form of a rib extending in the primary scanning direction, wherein the inequality surface region is provided by forming inequalities at an upper portion of the edge pattern, taught by Watanabe into Yoshida for the purpose enhancing abrasion and humidity resistance thereby preventing peeling of the protective layer.

***Allowable Subject Matter***

5. Claims 2 and 3/2 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Communication With The USPTO**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 571-272-2254. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Luu Matthew can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. Feggins/  
Primary Examiner, Art Unit 2861